STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

CASE 10106 and CASE 10107

EXAMINER HEARING

IN THE MATTER OF:

Application of Conoco, Inc., for a Salt Water Disposal, Lea County, New Mexico.

Application of Conoco, Inc., for a Salt Water Disposal, Lea County, New Mexico.

TRANSCRIPT OF PROCEEDINGS

BEFORE: JIM MORROW, EXAMINER

STATE LAND OFFICE BUILDING

SANTA FE, NEW MEXICO

October 3, 1990

A P P E A R A N C E S

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I N D E X

E X H I B I T S

APPLICANT'S EXHIBITS:

EXAMINER MORROW: Call Case 10106.

MR. STOVALL: Application of Conoco, Inc., for salt water disposal, Lea County, New Mexico.

MR. KELLAHIN: Mr. Examiner, I'm Tom Kellahin of the Santa Fe Law Firm of Kellahin, Kellahin & Aubrey, appearing on behalf of the applicant.

We would request, Mr. Examiner, that this case be consolidated for hearing purposes with the next case. Both of them deal with salt water disposal wells and they are in the same vicinity, by the same operator, and I think the same fact situation applies to both.

EXAMINER MORROW: All right; we'll call Case 10107.

MR. STOVALL: Application of Conoco, Inc., for a salt water disposal, Lea County, New Mexico.

EXAMINER MORROW: And we'll consolidate these two cases today for hearing purposes.

MR. KELLAHIN: Mr. Examiner, I have one witness, Mr. Jerry Hoover. Mr. Hoover is a petroleum engineer with Conoco, Inc.

EXAMINER MORROW: Mr. Hoover, would you please stand to be sworn.

JERRY W. HOOVER

the witness herein, after having been first duly sworn upon his oath, was examined and testified as follows:

EXAMINATION

BY MR. KELLAHIN:

Q. Mr. Hoover, for the record, would you please state your name and occupation?

A. My name is Jerry Hoover. My current position with Conoco is regulatory coordinator.

Q. Are you also a petroleum engineer by education and experience, Mr. Hoover?

A. That is correct.

Q. On prior occasions have you testified before the Division in both your capacities for your company on salt water disposal cases?

A. Yes, I have.

MR. KELLAHIN: We tender Mr. Hoover as an expert witness.

EXAMINER MORROW: He's accepted.

Q. Mr. Hoover, let me have you take a moment, sir, and tell us what you're seeking to accomplish with the two consolidated cases that are on the docket this morning?

A. Yes. Conoco seeks to convert its Southeast Monument Unit Well #95 to salt water disposal. It's

currently a shut-in oil well in the Weir Drinkard pool.

It also seeks to reactivate its Southeast Monument Well #9 which is a shut-in disposal well, to active salt water disposal, both of these to be disposing into the San Andres formation.

Q. Would you direct your attention to what is marked as Exhibit No. 1 and identify that?

A. Exhibit 1 is the OCD Form C-108, the authority to inject, and the remainder of the exhibits are attachments to this form meeting its requirements.

Q. Have you submitted for the Examiner's consideration a copy of the Division form that shows the specific well location for the Unit 95 well?

A. Yes, I have. That is Exhibit 2-A.

Q. And what is the footage location for the well?

A. This well is located 2130 feet from the south line, 1980 feet from the east line of Section 23, Township 20 South, Range 37 East of Lea County.

Q. The status of this well is currently a shut-in oil well?

A. That is correct.

Q. From what formation did it produce when it was a producing oil well?

A. Drinkard.

Q. And the disposal formation is San Andres?

A. That's correct.

Q. Do you have information for the Examiner on the location for the #9 well?

A. Yes, I do. Exhibit 2-B is the only form that either Conoco or the NMOCD could find in their files regarding the official location of this well. It was drilled in 1945. I don't know whether that predates the well location plat or not, but neither the State nor Conoco had a location plat. But this gives the official location as it was approved by the OCD.

Then, Exhibit 2-C is the location plat which we've drawn up based on that information.

Q. Let's talk about the #9 well for a minute. Give us some of its background. Let me direct your attention to Exhibit No. 3 and give us some of the background on that well.

A. Yes. The SEMU Well #9 has previously been a salt water disposal well, and Exhibit 3 is an OCD order which approved salt water disposal into this well. You'll notice it's dated May 7, 1963.

This well was shut in to disposal in 1971, and because of the 25-year age of the permit and since

we haven't put any water in the well since 1971, we felt like we ought to include this in our application to be sure it meets all the qualifications currently.

Q. Mr. Hoover, have you prepared a schematic of the #9 wellbore as well as the #95 wellbore?

A. Yes. Exhibit 4-A is the schematic for Well #95. It includes your wellbore schematic, casing and cement information across the top. The lower section is a completion history.

And Exhibit 4-B is the same information for Well #9.

Q. For both wells, your proposed zone of disposal is going to be the San Andres formation?

A. That is correct.

Q. Give us the footage for that disposal interval in each of the wells.

A. That interval between the two wells will range from 4100 feet to 5100 feet.

Q. And this is going to apply to each of the two wells?

A. That's correct. The 4100 feet will catch the uppermost interval in one of the wells and 5100 will cover the base in both of them.

EXAMINER MORROW: You're saying 5100 or 6100?

THE WITNESS: 5100.

Q. What is the current status of each well?

A. Well 95 is currently shut in, as is #9.

Q. Have you completed any of the work necessary in order to have the down-hole arrangement on the wells conform to the schematic as shown on Exhibits 4-A and 4-B?

A. No, the work has not been done. This is the proposed schematic.

Q. When the work is completed pursuant to these schematics, will you have two wellbores, each of which has isolated the proposed San Andres disposal zone from any other formation?

A. Yes, they will.

Q. In your opinion, will they be adequate to isolate that injection water disposed of in the San Andres formation from any potential fresh water sands?

A. Yes, I believe they will.

Q. Let me direct your attention now, Mr. Hoover, to Exhibit No. 5.

A. Exhibit 5 is a map showing the two proposed wells spotted in red in the middle of the map, 9 and 95. Those are surrounded by a red outline which indicates the half-mile radius of review.

Then all wells and operators within a

two-mile radius are shown outlined in green. The dashed blue line on the map outlines our Southeast Monument Unit. You'll note that the area of review for these two wells lies totally within that unit and within Conoco operations.

Q. What is the source of the proposed water to be injected into either one of these wells?

A. The source of water is a mixture of produced waters that comes together in a disposal system in our unit. Water comes from the SEMU Permian waterflood which is on the right half of this green circle area. You'll see some injection wells indicated there. That's the SEMU Permian waterflood.

The Warren McKee waterflood just outside of that green area, where you see additional injection wells to the right there, also contributes to that system. And then to the right of this map, but not shown, is our Warren Unit, which includes Blinebry, Tubb and Drinkard oil wells.

So the produced waters from those three areas come together into one system and will be disposed of in these wells.

Q. The specific formations from which the water is produced would include the Blinebry, the Tubb, the Drinkard and what others?

A. The McKee. That's the deep zone. And then the most shallow would be the Penrose and Upper Grayburg.

Q. What is Conoco currently doing with the water produced from those formations?

A. Currently we're disposing of it into a salt water disposal well. If you'll look at your map one more time, on the extreme right-hand side find Section 29, second section up from the bottom. You'll see a salt water disposal symbol on Well #24 in Section 29.

That well is currently disposing of this same mix of produced waters and has been for the last 13 years. Our anticipated pressures and rates for these two wells are based on our experience in this well. Disposal is also into the San Andres formation in that well.

Q. Over that 13-year period, did Conoco experience any difficulty with the #24 salt water disposal well?

A. We have not, nothing more than just what would be considered normal maintenance on a disposal or injection well that's taken place in this well.

Q. When we look at your Exhibit No. 5, the area contained within the red-ellipsed pattern, have you identified and tabulated the wellbore information

for all wells within that area of review?

A. Yes, we have, and that is contained in Exhibit 6. We've not only put into this table well data from those actually within the red area, but you'll notice there's several near but just outside the boundary and we've included those, too, for your information.

This table includes current status completion intervals, casing cement programs, spud and completion dates, and the completion formations for all of these wells.

Q. Within this half-mile area of review, based upon the information you have studied, can you reach a conclusion as to whether or not any of those wellbores pose a potential risk if either or both of these wells are approved for disposal purposes?

A. We do not believe they will. All of the wells within the outlined area of review do have cement across the proposed disposal interval, the San Andres.

Q. Have you tabulated the information for all plugged and abandoned wells within the area of review?

A. Yes. Those are included as Exhibits 7-A through E. These are wellbore schematics showing completion and plugging information on these five

wells. There are three plugged wells actually in the area of review and two others very near to the boundary of that, so we've included the schematics for all five of them.

Q. Summarize for us, Mr. Hoover, what your plan of operation will be?

A. Our plan of operation, some of the details of that are given on Exhibit 8. This is another attachment to the Form C-108 and it specifically answers questions from parts 7, 8, 9 and 10 of the form.

We're anticipating that the average injection rate will be about 4,000 barrels of water per day with an upper maximum of 5,000 anticipated. We expect the average surface pressure to be somewhere around 650 pounds, but we would request that the order establish a maximum pressure not to exceed the two-tenths psi per foot, which is your standard.

This would mean that on Well 95, if we calculate that from the top perf, that would be 832 pounds; on Well #9 it would be 909 pounds surface injection pressure.

Q. Have you had exhibits prepared that show the composition and compatibility of the waters to be disposed of in either of these two injection disposal

wells?

A. Yes, we have. Those begin with Exhibit 9. Exhibit 9 is a water analysis of the mixture of produced water that we are currently putting into the Warren McKee #24, and the same source would be used as injection for these wells.

Then Exhibit 10 is a San Andres Water Analysis. There are no producing San Andres wells within several miles of this area. This water analysis was taken from that same Warren McKee #24 well prior to its being converted to injection, some 13 years ago. It was being considered as a water source and at that time we took this water sample from it, and this is the analysis.

Since we cannot get a current sample, Exhibit 11-A shows a comparison of these two analyses, the current disposal water and this previous San Andres water. It gives us a compatibility analysis, which shows that there should be no problems. In fact, Exhibit 11-B is a statement from the analyzing company that, in their opinion, they do not believe there will be any problem with the mixture of these waters. Of course, we've had 13 years of experience in the one disposal well with exactly the same program without any trouble.

Q. I would direct your attention to Exhibit No. 12.

A. Exhibit 12 is a type log in the area. If you'll look at your map again, if you still have that handy, let me show you where that well is identified for you. Exhibit 5 is the folded map. All right. You're looking in the center, just outside of the red outline in the upper left-hand corner, Well #122? All right. That's the well this type log was taken from.

This simply is a reference for you, to show the relationship of the various zones that we're discussing, those from which the produced water is coming from and the San Andres into which we will inject.

Q. Is there any current San Andres oil protection within the area of review?

A. No, there is not.

Q. Do you know what the nearest San Andres oil producer is?

A. I don't know the exact location. I know it's a matter of more than a mile.

Q. Would you identify and describe the Exhibit 13 information.

A. Exhibit 13-A is a letter which-- Well, let

me mention first that there were no offsetting operators--Conoco offsets itself--so the only contact we made was with the surface landowner, and this letter is the letter we sent to SW Cattle Company, who is the fee land surface owner.

We inadvertently gave the wrong date for the hearing, so we sent a second letter, which is Exhibit 13-B, correcting that date to show it is October 3rd.

Then Exhibit 14 are the certified mail receipts from the mailing of both of these letters.

Q. The oil and gas minerals for Section 23, are those fee minerals or are they state or federal minerals?

A. They are federal minerals.

Q. The area outlined in the blue, then, is the SEM Unit?

A. That's correct.

Q. In your opinion, Mr. Hoover, will approval of this application be in the best interests of conservation, the prevention of waste and the protection of correlative rights?

A. Yes, I believe it will.

Q. Will it afford to Conoco and the interest owners the opportunity to dispose of produced water in

an efficient and economic manner?

A. Yes, it will.

MR. KELLAHIN: Mr. Examiner, in addition to Mr. Hoover's notices to the cattle company, we have also sent them a copy of the C-108 and the application itself. That mailing to the cattle company was on September 12, 1990, more than 20 days prior to the hearing; so notwithstanding the fact that Mr. Hoover's first letter to them gave them the wrong date, we had also mailed notice to them, and I'll supply that for the record at the conclusion.

That concludes my examination of Mr. Hoover. We will move the introduction at this time of his Exhibits 1 through 14.

EXAMINER MORROW: Exhibits 1 through 14 are admitted.

EXAMINATION

BY EXAMINER MORROW:

Q. Mr. Hoover, did you tell us where the base of the fresh water is in this area?

A. There are no known fresh water aquifers in this area, and I believe we did neglect to mention that there are no fresh water wells located within this area of review that we're looking at.

In fact, I called the state engineer in

Roswell and had him research his records, and he did not find any record of any fresh water wells in this area.

Q. Have you reinjected any water into the flood that you discussed over on east of these wells?

A. This same water is being injected into the SEMU Permian waterflood at this time.

Q. I believe, if I understood your testimony correct, you will take produced water from that flood. Would you explain the reasoning behind that plan?

A. We have currently the SEMU Permian flood. Some of the wells are being phased out, it's in the latter stages of the completion of the waterflood there, so we will have less capacity for the disposing of this water. We have excess produced water at this point, plus the water from the McKee flood and also the Warren Unit area. We're doing quite a bit of work in the McKee area, which is increasing production.

Q. Is the McKee under flood?

A. The McKee is under flood, that's correct.

EXAMINATION

BY MR. STOVALL:

Q. Mr. Hoover, so it's in the record, and I'll make you a copy of it, we do have a letter from SW

Cattle Company being opposed to the application. Of course, this is not any sort of sworn testimony, but they do reference numerous leaks and damages and loss of dialogue between Conoco and the landowner.

Would you care to respond to that letter at this time, Mr. Hoover?

A. All I can say, I'm not aware of any dialogue from SW Cattle, at least, concerning this application. After I sent notice to them we've not heard from them with any problems or protest. I cannot speak to specific past dialogue, without checking with other persons in our company they might have contacted.

As far as claims of leaks and damages, I'm not aware of any specific problems that have been brought to our attention.

EXAMINER MORROW: Will you contact him and discuss that with him, then? That would probably be a good plan.

THE WITNESS: All right.

EXAMINER MORROW: Anything more? The witness may be excused.

MR. KELLAHIN: That concludes our presentation, Mr. Examiner.

EXAMINER MORROW: Thank you. We'll take

these two cases under advisement, Case Nos. 10106 and 10107.

(Thereupon, the proceedings concluded.)

CERTIFICATE OF REPORTER

STATE OF NEW MEXICO)
) ss.
COUNTY OF SANTA FE)

I, Carla Diane Rodriguez, Certified Shorthand Reporter and Notary Public, HEREBY CERTIFY that the foregoing transcript of proceedings before the Oil Conservation Division was reported by me; that I caused my notes to be transcribed under my personal supervision; and that the foregoing is a true and accurate record of the proceedings.

I FURTHER CERTIFY that I am not a relative or employee of any of the parties or attorneys involved in this matter and that I have no personal interest in the final disposition of this matter.

WITNESS MY HAND AND SEAL October 14, 1990.

CARLA DIANE RODRIGUEZ
CSR No. 91

My commission expires: May 25, 1991

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Oil Conservation Division